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ABSTRACT

This paper provides 18 lesson plans that use educational technology for instruction in the visual and performing arts in secondary schools; these lesson plans were developed as part of a workshop held in the State of Washington in May 1988. The lesson plans were developed to follow the format of State of Washington Superintendent of Public Instruction Guidelines. Each lesson comprises activities that address the following five learning process components for the visual and performing arts: (1) perceiving (to attain an awareness of the arts through the senses); (2) experiencing (to have personal involvement with the arts through participation); (3) understanding (to comprehend and interpret the elements of art forms and other relationships); (4) creating (to develop personal statements through problem solving in the arts); and (5) aesthetic valuing (to make evaluations, choices, and judgements about the arts based on personal criteria). Each lesson plan contains goals, objectives, activities, lessons, and an explanation of how each component is addressed in that lesson. A list of workshop participants and a list of producers of the software cited are provided. (EW)

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THE Northwest Regional Educational Laboratory

TECHNOLOGY PROGRAM

IDEAS FOR INTEGRATING THE MICROCOMPUTER INTO VISUAL ARTS INSTRUCTION

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November 1988

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Table of Contents

Page

INTRODUCTION 1

A WALKING TOUR OF TEXTURES 3

SENSORY EXPLORATION 4

FISH AS ART 5

A TASTE OF COLOR 6

REPRESENTATION OF INFORMATION IN MAP FORM 7

INTRODUCTION TWO- AND THREE-DIMENSIONAL STUDY 8

COMPUTER GRAPHICS AWARENESS 9

INTRODUCTION OF THE COMPUTER AS AN ART MEDIUM 10

TEXTURE 11

EMPHASIS IS ON PATTERN 12

ARTISTIC EXPRESSION 13

USE OF ILLUSTRATION IN POETRY 14

SYMBOLIC SELF-PORTRAIT 15

UNDERSTANDING THE IMPACT AND DEVELOPMENT OF COMMERCIAL ART THROUGH AMERICAN HISTORY 16

COLOR WHEEL 17

EXPANDING SHAPES 18

ART AND CULTURES 19

WAYS TO ACHIEVE DEPTH IN A PICTURE 20

VISUAL ARTS AND TECHNOLOGY WORKSHOP PARTICIPANTS LIST 21

SOFTWARE CITED 23

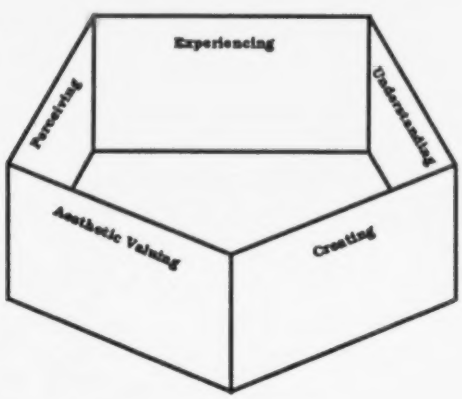
Introduction

The contribution of technology to the instruction of visual and performing arts in secondary schools is easier to imagine than to implement. Teachers can review the new technologies and see how they might be helpful in arts instruction, but restraints of budgets, training, and time have conspired to prevent the introduction of technology into most of their classrooms.

In an attempt to help these teachers of visual arts to plan their use of technology, the State of Washington's Office of the Superintendent of Public Instruction (SPI) and the Northwest Regional Educational Laboratory (NWREL) hosted a workshop which combined educators from the arts and educators from technology. The task of the participants was to amend the SPI's *Visual & Performing Arts Curriculum Guidelines for Washington Schools* (1987) to include suggestions on teaching with technology. The workshop was held in Ellensburg, Washington on May 18-19, 1988.

During the workshop, the participants alternated between learning about the newest of the technology, and designing lessons which make effective use of that technolgy. There were demonstrations of the latest in graphics software, desktop publishing, CD-ROM (compact disks), video-disks, color printing, image projection and the interactions among all of these technologies. After each demonstration, small groups would retreat to develop a lesson shell which used a part of the technology. In each lesson, participants were encouraged to use some traditional materials and some new technology. After designing the lessons, the participants shared and critiqued their work with the entire group.

The lessons which were developed followed the format of the SPI *Guidelines*. Each lesson is comprised of activities which address all of the five learning process components for visual and performing arts which were identified in that publication. The processes are represented by a pentagon, with each side a process which contributes to the whole lesson:



The learning process components are:

Perceiving:	to attain an awareness of the arts through the senses
Experiencing:	to have personal involvement with the arts through participation
Understanding:	to comprehend and interpret the elements of the art forms and their relationships
Creating:	to develop personal statements through problem solving in the arts
Aesthetic Valuing:	to make evaluations, choices, and judgments about the arts based on personal criteria.

The *Guidelines* set five common goals for the visual and performing arts which are to be attained through activities using the five processes listed above. These goals are:

1. Students are able to use sensory experiences to comprehend the various art forms.

2. Students are able to use their skills to participate in the arts.

3. Students are able to apply their knowledge of concepts, elements, principles, theories, and processes in the arts.

4. Students are able to express themselves creatively through the arts.

5. Students are able to make informed judgments about the arts and the relationships of the arts to the histories, cultures, and environments of the world's people.

The lessons which follow reflect these goals and conform to the pentagon metaphor which was established in the guidelines.

A Walking Tour of Textures

Goal: Students are able to use sensory experiences to comprehend the various art forms.

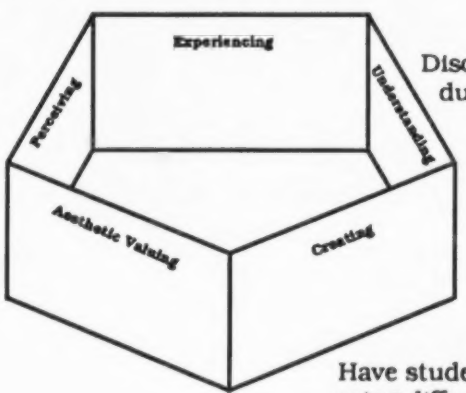
Objective: The teacher will provide opportunities for the student to develop skills in visualization and observation.

Activity: Observe detail, pattern, outline, surface, texture and color. (K-3)

Lesson: In this lesson, students have opportunities to develop skills in visualization and observation of texture while on a walking tour.

Touch what you and the students observe while on the walking tour.

Take a walking tour with the students to observe visual textures.



Discuss what was seen and felt during the walking tour.

In a discussion with the students, have them imagine a world without texture.

Have students make textural collages using different senses such as:

(a) Visual (computer print program)
(b) Tactile (paper, sand, etc.)
(c) Sound (tape of different sounds)
(d) Taste (food)

Sensory Exploration

Goal: Students are able to use sensory experiences to comprehend the various art forms.

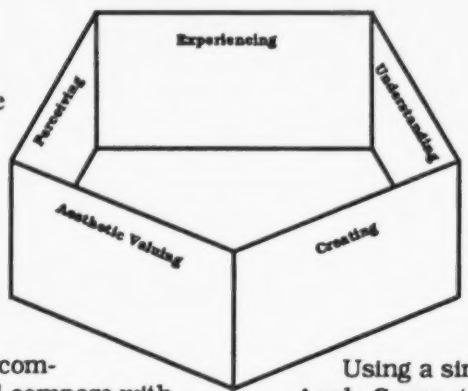
Objective: The teacher will provide opportunities for the student to become familiar with the tactile considerations of visual art media such as clay, stone, weed, fibers, metal, and paper.

Activity: Explore variations in surface texture.

Lesson: Students explore textures and learn about the elements which comprise a textural pattern by simulating one on the computer.

Homework assignment:
- Find seven different unique examples of texture
- Identify and label and share with the class

Have students observe and discuss texture through the use of:
- National Art Gallery– CD-ROM
- Touching, seeing, smelling, tasting specific objects with texture



1. Establish a vocabulary used to describe textures
2. Identify and label textures on:
   computer texture patterns
   surface texture rubbings
3. Discuss tactile textures with students

Have students create a second computer texture pattern sheet and compare with first one
- Tell which ones they like best
- Give reasons why
- Share evaluations with class
- Small
- Group discussions

Using a simple paint program on an Apple Computer, students will create visual texture patterns.

Fish As Art

Goal: Students are able to use sensory experiences to comprehend the various art forms.

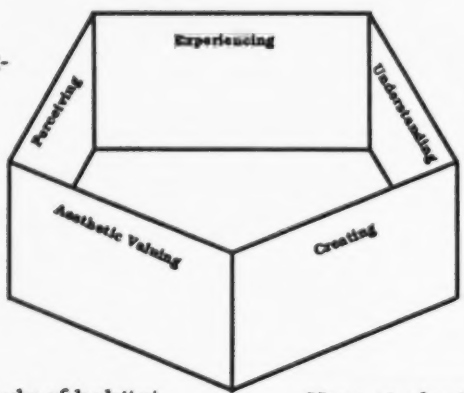
Objective: The teacher will provide opportunities for the student to develop awareness through all the senses to enhance learning in the visual arts.

Activity: Translate one or several sensory sensations into a visual message.

Lesson: Students visit a fish hatchery as the basis for a lesson in the visual arts.

Visit fish hatchery– touching and smelling fish.
Observing slides, pictures, laser disks, and digitized images

Listening to and observing examples of fish.
Show cartoons ("Charlie," etc.), slides, videodiscs, etc.



Discuss, analyze form, color, texture, and patterns examining with magnifying glass, examining form in nature (e.g., using Odell Lake to study relationships of fish.)

Relating study of fish to the study of habitat (nature).

Have students draw fish prints, and fantasy fish designs.
Create a new product by having small groups design fish.

A Taste of Color

Goal: Students are able to use sensory experiences to comprehend the various art forms.

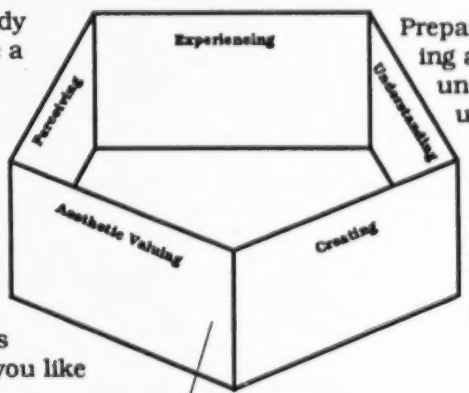
Objective: The teacher will provide opportunities for the student to develop awareness through all the senses to enhance learning in the visual arts.

Activity: Explore interrelationships between the visual elements and the senses.

Lesson: Students will develop an awareness of color through the senses, especially nonvisual senses. Students will identify color associated with flavors through these activities. Often we have strong emotional responses to colors and flavors or odors, especially in foods.

Relate sensations of colors to responses of the students through use of computer monitor, intense color field paintings. What emotions are expressed by the students as a result?

Blindfold students. Using candy flavorings, have students write a list of colors associated with various odors. Candies such as Life Savers may be used to similarly associate color with taste. Discuss with students what colors we expect to find with various flavors. What happens to our perceptions of foods when the color of the food does not match the flavor? Would you like green eggs and ham?
Unblindfolded, have students predict the flavor of various candies, lollipops, etc. based upon their color only.



Prepare drinks using food coloring and flavoring which have unusual colors for the flavors used, e.g., purple colored, but orange flavored. What emotions/responses do you feel when you see specific colors? Compare colors of foods with appetite for the food, colors used in advertising for foods.

Discussion of the experience. Discuss the student's favorite color and favorite flavor. Are they related? Color expectation; what colors do we expect to see for specific foods or flavors?
Are personal color perceptions and preferences a part of the expectations?

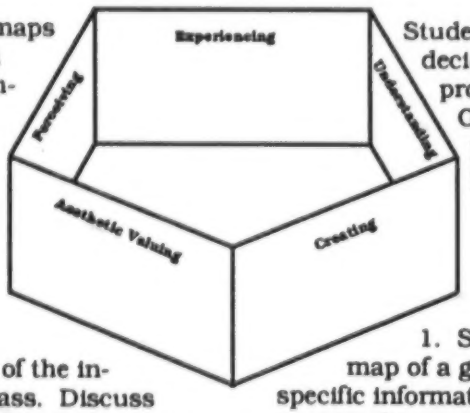
Have students use a paint program on a computer and design their own lollipop of similar candy. Use the "fill" capability of the paint program to fill the lollipop with an appropriate color if the candy would have a specific flavor. What color would it be if it was sweet? What color if sour? What color would it be if it had a bitter flavor? What color would a lime-flavored lollipop be?

Representation of Information in Map Form

Goal: Students are able to use their skills to participate in the arts.
Objective: The teacher will provide opportunities for the student to explore two- and three-dimensional media, materials, and techniques.
Activity: Select appropriate materials and techniques in two- and three-dimensional media to communicate an idea. (Grades 7-12)
Lesson: Activities in this lesson are oriented around maps and the information they can represent for application in social studies and geography studies.

Examine a map in-depth, with a discussion of the information presented. A comparison between two related maps may be helpful. For example, use a 3-D relief map and a corresponding topographic map to allow the comparison of the represented information.

Present students with several maps which represent information in various ways. Discuss the techniques used to convey the desired information, e.g., color, topographic lines, 3-D relief, etc. In what ways are these techniques used, how are the keys to the data represented? What types of information may be represented on maps?



Students should use a map to decide upon the solution to a problem or task, for example: Given a topographic map, plan a route for a hike from point A to point B.

Share the maps and structure of the information with others in the class. Discuss the ways in which information has been represented. What value do maps have? Why use maps (or other graphic representations) rather than table of numbers to represent such things as population density or other pieces of information? Is a picture really worth 1,000 words?

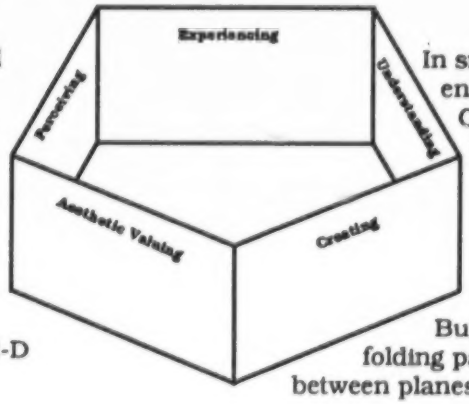
1. Students should create a map of a given area to represent specific information. For example, given a topographic map, create a 3-D relief map which corresponds to the topographic map.
2. Use a computer-based drawing program or cartography program to generate individual maps for a task.

Introducing Two- and Three-dimensional Study

Goal: Students are able to use their skills to participate in the arts.
Objective: The teacher will provide opportunities for the student to explore two- and three-dimensional media, materials, and techniques.
Activity: Introduce two- and three-dimensional study.
Lesson: Students make two-dimensional and three-dimensional representations of the same objects using both traditional materials and computer simulations.

Show and tell of objects (3-D) and pictures (ads, picture) of the objects brought from home.

Draw an object using paper and pencil.
Using modeling clay take the paper drawn object and render it 3-D.



In small groups discuss difference between 2-D and 3-D.
Go to the computer to view 3-D simulations.

Display constructions– Share and discuss characteristics of 2-D and 3-D
- Hidden volume
- Measure area, volume
- Math tie-in
- Size, scale

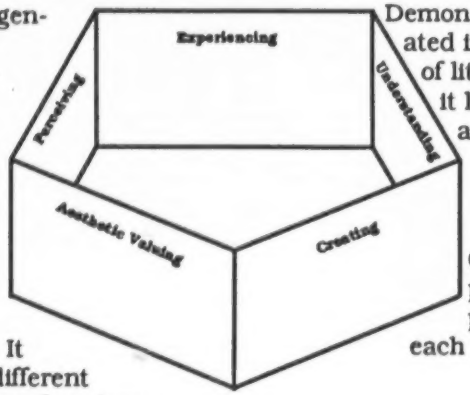
Build 3-D geometric forms by folding paper. Show the relationships between planes and solids.

Computer Graphics Awareness

Goal: Students are able to use their skills to participate in the arts.
Objective: The teacher will provide opportunities for the student to explore two- and three-dimensional media, materials, and techniques.
Activity: Expand knowledge of the range and limitations of various materials.
Lesson: In this lesson, students explore the use of the computer as an artistic material.

Using the Koala pad, duplicate a nonobjective pencil drawing on 3x5 card to computer screen. Record comparisons of both.

Have students view computer-generated pictures on screen and printouts. Compare with photos, paintings, drawings. What similarities/differences in visual effects do you observe?



Demonstrate how computer-generated image is created by a series of lit and unlit pixels. How does it limit the quality of shapes and lines used in a graphic?

Discuss with students how drawings changed when converted to pixels. How do curves and slanted lines differ? It doesn't replace drawing, it is a different medium allowing greater freedom of exploration.

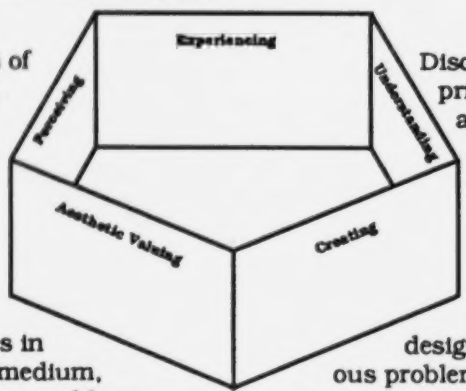
On an 80x25 grid graph paper draw a recognizable picture in pencil. Add color to each square as if it were a pixel.

Introduction of the Computer as an Art Medium

Goal: Students are able to use their skills to participate in the arts.
Objective: The teacher will provide opportunities for the student to explore two- and three-dimensional media, materials, and techniques.
Activity: Expand knowledge of the range and limitations of various materials.
Lesson: In this lesson, students explore the use of the computer as an artistic material.

Have students experiment with five different ways making a poster of their name (different colors, shapes, sizes, layout, emphasis, etc.) Students should work in groups of two while on computers.

(1) Students bring in examples of computer art (commercials, posters, etc.)
(2) Teacher introduces computer, menu, etc.



Discuss the elements and principles of design. Compare and contrast published computer graphics and other student work.

Have students present problems, solutions and possibilities in relation to computer as an art medium, with a group discussion on these problems, solutions and possibilities.

Have students choose and design the best solution to various problems and create these on the computer working in groups of two.

Texture

Goal: Students are able to apply their knowledge of concepts, elements, principles, theories, and processes in the arts.

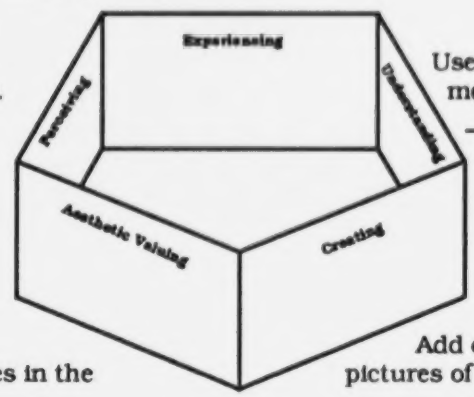
Objective: The teacher will provide opportunities for the student to identify and apply the elements and principles of design.

Activity: Introduce the elements of design.

Lesson: Students learn about texture by studying it in unusual contexts.

Using a copying machine, computer scanner, or a camcorder, digitizean object. Have students use computer graphics to change the texture of the object and discuss how they have changed its qualities.

Have students keep a visual dictionary throughout the year. Each entry should include an example of the texture and a verbal description of it.



Use words in context, similes, metaphors (texture is like _____).

Expose students to works where authors have used textures.

- Prepare a hall exhibit of the altered textures.
- Exhibit texture dictionaries in the library .
- Have students make one-word descriptions of textures.

Add color to xeroxed or digitized pictures of texture.

Emphasis Is On Pattern

Goal: Students are able to apply their knowledge of concepts, elements, principles, theories, and processes in the arts.

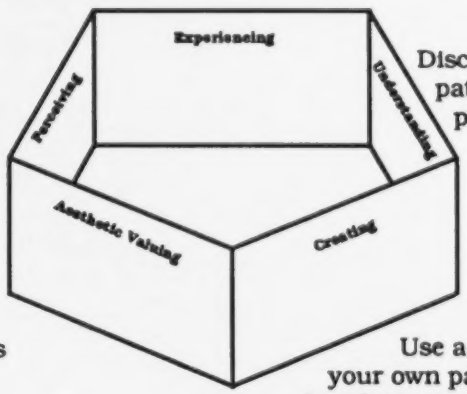
Objective: The teacher will provide opportunities for the student to identify and apply the elements and principles of design.

Activity: Introduce the principles of design.

Lesson: In this lesson the students use technology to analyze what characteristics patterns have.

Use a grid box to explore patterns (using paper or on computer). Use computer software which allows tiling (e.g., Sunburst problem-solving patterns).

Show examples of patterns to introduce terminology and to help students define and identify patterns using a slide show, computer graphics, videodisc, pictures, etc.



Discuss the components of pattern. Can you have a pattern with only one item?

Discuss how different patterns make you feel.

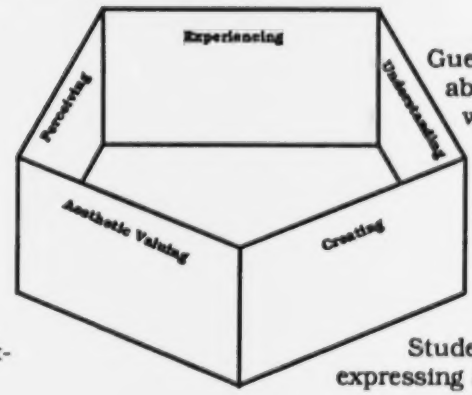
Use a variety of media to create your own patterns, (e.g., custom paint brush in a computer program, LOGO pattern using a math formula).

Artistic Expression

Goal: Students are able to express themselves creatively through the arts.
Objective: The teacher will provide opportunities for the student to create an original artistic statement.
Activity: Apply the creative process to develop an original artistic statement.
Lesson: This lesson helps students to discover the feeling which is expressed in a work of art.

Discuss what artists were feeling when doing specific pieces. Summarize the emotions associated with each piece in a database record.

Using an art videodisc:
- Show artworks in which artist is expressing a feeling
- Look at three examples of "Madonna and Child"



Guest artist shares feelings about his/her work/or just works with students observing.

Students discuss each other's work in terms of the feelings expressed.

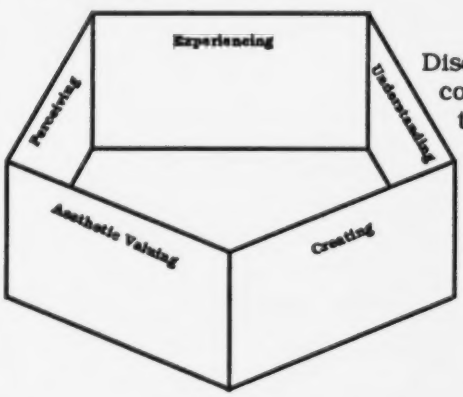
Students create their own art expressing a feeling.

Use of Illustration in Poetry

Goal: Students are able to express themselves creatively through the arts.
Objective: The teacher will provide opportunities for the student to create an original artistic statement.
Activity: Apply the creative process to develop an original artistic statement. Experiment with developing a personal style.
Lesson: Students translate between the verbal images of poetry and their own graphic images to express the same ideas.

Use various borders around poem text and experience the changes each gives to the poem.

Review published poems with illustrations.



Discuss the use of line, form, color, etc. in the illustrations to express mood and how changes.

Presentation of published poems by students with class critique and discussion.

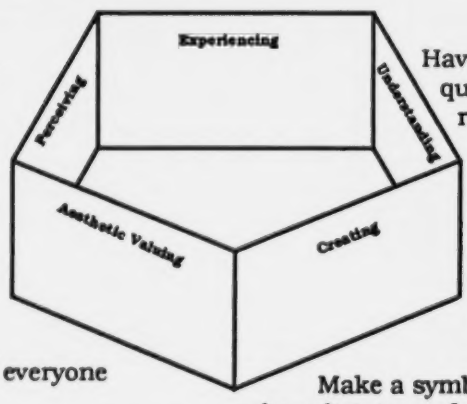
Create poem and illustrate it to provide specific mood.

Symbolic Self-Portrait

Goal: Students are able to express themselves creatively through the arts.
Objective: The teacher will provide opportunities for the student to create an original artistic statement.
Activity: Introduce the creative process as a concept. Apply the creative process to develop an original artistic statement. Experiment with developing a personal style.
Lesson: Students explore their self-concepts and use that exploration to develop a self-portrait.

(1) Digitize portrait or use string to compare leg lengths, arm lengths, etc.
(2) Share lists of unique selves

Lead students in a discussion:
How are we the same?
How are we different?
What are our physical and nonphysical traits?
Use examples from animal world.
Make a list of your unique self, avoiding stereotypes.



Have students consider the question: How does this list reflect your unique self?
Use the metaphor of a paper bag with things on inside of the bag you feel are true reflections about yourself and on outside of the bag what others say about you.

What would the world be like if everyone were the same?
What does that tell you about you and society?

Make a symbolic self-portrait using above list, icons for past, present, future, happy desires. Use computer images and traditional media.
Use digitized portrait image to manipulate and create new image of self.

Understanding the Impact and Development of Commercial Art through American History

Goal: Students are able to make informed judgments about the arts and the relationships of the arts to the histories, cultures, and environments of the world's people.

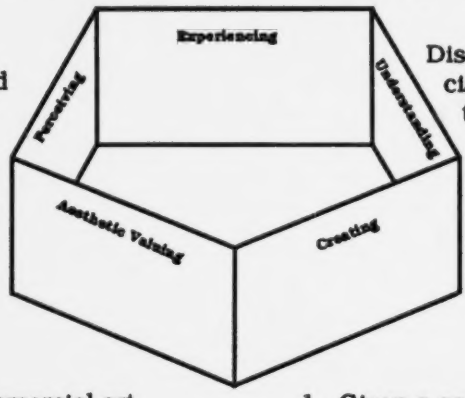
Objective: The teacher will provide opportunities for the student to value art as a meaningful form of human expression and communication.

Activities: Examine visual messages and environments of other cultures. Understand the visual arts as a reflection of the social and intellectual times in which they were produced.

Lesson: Activities in this series are oriented around the developments in commercial art in the U.S.

Provide students with examples of commercial art and signs from several periods of time in history: Colonial, 1800s, 1900-1950, 1950-1980. Compare the media, production methods, technologies used, textures, sounds used, etc. Are there particular themes which reflect the period of time? For example, are advertising examples from times of war different than times of peace?

As a class group, discuss the influence of commercial art and advertising on your life. How many times today have you seen or been influenced by an advertisement, sign, or similar artwork? How would your daily life be influenced by advertising if you lived in 1788 instead of 1988?



Discuss the ways that commercial art and advertising reflect the times. What are the driving forces in the art: religion, economy, technology, political events, etc.? Are there specific effects which are a direct result of the technologies available as well?

Discuss the effect that the commercial art has on these senses. Why has commercial art changed with time? Is technology the only reason? What effect has technology (TV, computers, etc.) had on the field? How is your life affected on a day-to-day basis? Have you ever purchased anything based upon an advertisement? Discuss this in relation to the artwork which has been examined and produced by the students.

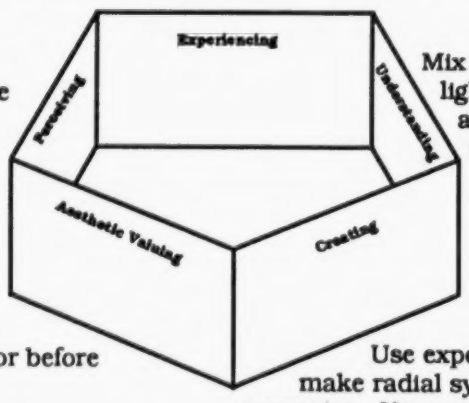
1. Given a specific time period and subject, design and implement a sign or advertisement which is an appropriate representation of the time and subject.
2. Given the period of time 2000-2050 and a specific business or product, design and implement a sign or advertisement appropriate to the style and technology of the time.

Color Wheel

Goal: Students are able to apply their knowledge of concepts, elements, principles, theories, and processes in the arts.
Objective: The teacher will provide opportunities for the student to identify and apply the elements and principles of design.
Activity: Introduce the principles of design.
Lesson: Students use a color wheel to study how color contributes to design.

Mix colors on computer, put in primary, then secondary, then shading.

View world to see how color is used. Compare black and white and color images. Discuss how color is made and mixed. Discuss differences between mixing light versus pigment (could use National Gallery videodisc).



Mix colors using paints and lights in the same manner as above. Discuss the differences and similarities.

Write paragraph on what is color before and after this unit.
Share finished work.
Talk about design and use of color.

Use experience of color wheels to make radial symmetrical designs on the computer. Use any cut-and-paste, symmetry, and transposing features available.

Expanding Shapes

Goal: Students are able to apply their knowledge of concepts, elements, principles, theories, and processes in the arts.

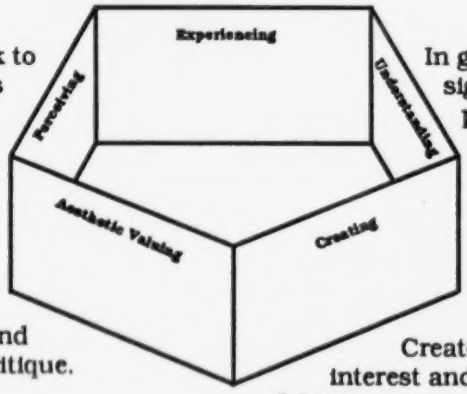
Objective: The teacher will provide opportunities for the student to identify and apply the elements and principles of design.

Activity: Introduce the principles of design.

Lesson: In this lesson students study how particular shapes form a design theme in a work of art.

Use computer graphics to isolate and study design elements.

Use National Gallery Video-disk to show designs and compositions from history.



In groups take computer designs and critique. ID and list principles of design. List artist who used similar elements (from library) Describe artist (from CD-ROM).

Record designs on videotape; send to other school (exchange) for critique.

Create a design and center of interest and expand out using elements of design.
Use color for emphasis. Show the effect of repetition of design.

Art and Cultures

Goal: Students are able to make informed judgments about the arts and the relationships of the arts to the histories, cultures, and environments of the world's people.

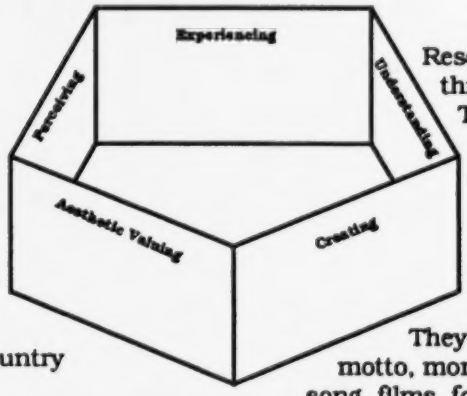
Objective: The teacher will provide opportunities for the student to value art as a meaningful form of human expression and communication.

Activities: Examine visual messages and environments of other cultures. Understand the visual arts as a reflection of the social and intellectual times in which they were produced. (Grades 7-9)

Lesson: In this lesson students study the relationship between what a culture values and what its art is like.

Have students research the US culture. They should interview parents, peers, grandparents; review films, videos, graphic arts, music, flags, clothing, food, dance and advertising.

Cultural awareness
- Start with school culture
- U.S. culture
- Videotape and show school culture



Research should be repeated, this time for a foreign culture. The results of each student's research should be entered into a database.

The class should discuss the country which they created.
Have each student answer:
- Would you like to live in this country and why?
- Would your parents like to live in this country and why?
- Would Geroge Washington like to live in this country and why?
- Would George Jetson like to live in this country and why?

Have students create their own country.
They should include artifacts, motto, money, clothing, flag, national song, films, foods, dance, etc. The culture should reflect the values which are important to the people.
Have each student create a folk story which would be appropriate in this culture.

Ways to Achieve Depth in a Picture

Goal: Students are able to apply their knowledge of concepts, elements, principles, theories, and processes in the arts.

Objective: The teacher will provide opportunities for the student to identify and apply the elements and principles of design.

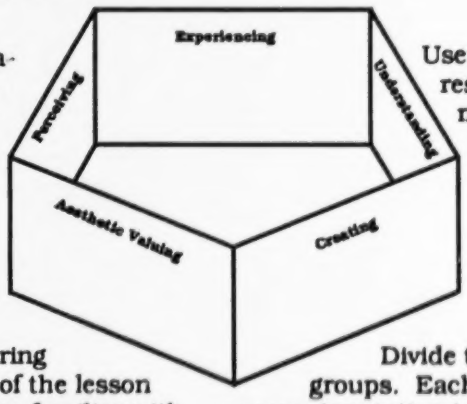
Activity: Introduce the principles of design.

Lesson : Student will be able to understand and demonstrate the following concepts:

1. Objects lower in the picture plan appear closer.
2. Objects larger than others appear closer.
3. Objects that are closer have sharper detail.
4. Colors that are more intense appear closer.
5. Objects that are overlapped create a feeling of depth and space.

- Physically arrange children to demonstrate depth.
- Manipulate objects on desk, then look at objects to perceive depth perception related to size.
- Roll piece of paper to form a long cylinder through which to look to experience depth perception.

- Show painting, slides, magazine pictures, videodiscs to demonstrate depth perception.
- Find photos that show depth (i.e., big feet in a picture, big hands).



Use Creative Camera, artists in residence, photographs, magazine pictures, art prints, etc. to demonstrate depth.

General demonstration and sharing should occur at the completion of the lesson so that all class members become familiar with the five concepts.
Each group is responsible for presenting their examples to the rest of the class.

Divide the class into five equal groups. Each group would work at a computer station to create examples of their assignment. Each group assignment should reflect lesson objectives. Teacher at this point can give direction and support to aid in concept development.

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